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ABSTRACT

A World Wide Web-based distance learning course at Georgia State University, developed with World Wide Web Courseware (WebCT), is the focus of this study. The course, "Advanced Reference: Online Searching Techniques," concentrated on assisting students in developing skills for searching Internet resources, in particular the resources and databases of the Georgia Library Learning Online (GALILEO) initiative. The target audience for the course was school library media specialists enrolled in the Educational Specialist Degree Program with a concentration in library media technology. Research questions were: (1) Is Web-based course delivery an effective way to prepare school library media specialists in the instructional uses of Internet information resources? (2) Is Web-based instruction a successful medium for helping school library media specialists develop skills in searching and evaluating GALILEO databases? and (3) How do participants react to Web-based instruction? Sources of data were logs from the synchronous chat area, bulletin board postings, e-mail communications, course usage statistics, student projects, and structured interviews with the participating students. Results from the preliminary study indicate that participants' attitudes toward Web-based instruction are positive, and Web-based instruction provides a learning environment in which participants can develop electronic literacy skills and share their ideas and projects. (Contains 10 references.) (MES)

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Web-based Instruction for School Library Media Specialists

Unleash the Power of the World Wide Web

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A Web-based distance learning course developed with World Wide Web Courseware (WebCT) is the focus of this study. The course, Advanced Reference: Online Searching Techniques, concentrated on assisting students in developing skills for searching Internet resources, in particular the resources and databases of the Georgia Library Learning Online (GALILEO) initiative. The sources of data were logs from the synchronous chat area, bulletin board postings, e-mail communications, course usage statistics, student projects, and structured interviews with the participating students. Results from the preliminary study indicate the following: (1) participants' attitudes towards Web-based instruction are positive and (2) Web-based instruction provides a learning environment in which participants can develop electronic literacy skills and share their ideas and projects.

Introduction

In the fall of 1998, eighty-nine percent of public schools were connected to the Internet with 51% of classrooms, computer labs, and libraries having Internet access; the percentages were 27% in 1997, and only 3% in 1994 (U.S. Department of Education, 1999). Vast technological changes are taking place in schools. Unfortunately preparation programs for school library media specialists are not providing a technology-rich environment where students can develop the requisite skills to become instructional leaders. Collaboration, leadership, and technology are seen as the underlying themes for guiding the library media specialist in developing an effective, student-centered program (Hopkins, 1999). The three themes are intrinsically inter-related. To effectively collaborate and lead, media specialists must be equipped with the skills necessary to assist students and teachers in using online as well as print resources. The situation is not new, but has been exacerbated by the significant and rapid adoption of computer-based information technologies in many schools. An often-heard lament is "the things I didn't learn in library school."

Marcia Bates (1999) in a paper presented at The American Library Association Congress on Professional Education made the following comment concerning information technology and library education: "To get out there in that wider information world we do have to have a better

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understanding of the information technology than library education has typically afforded" (2c). Main (1998) suggests that "requiring all students to take a class through a Web-based virtual classroom ensures that students learn in an environment in which they will have to work" (p. 341). In the fall of 1998 Georgia State University began supporting Web-based distance education, thus providing an opportunity to use information technology to teach a course that focused on information retrieval and use.

Background

Advanced Reference: Online Searching Techniques had traditionally been taught on campus. In the spring of 1999 it was offered as a pilot distance learning course. World Wide Web Course Tools (WebCT) was the course management and delivery system employed to make the course available in a distance learning environment. Piloting the course offered the instructor an opportunity to evaluate the course and determine if Web-based distance learning was a feasible and effective means of delivery for this particular course content. Using the data gathered during this research, the course content and features are being revised. The course will be offered again in the spring of 2000. School library media specialists enrolled in the Educational Specialist Degree Program with a concentration in library media technology are the targeted audience for the course.

Course Design

Alessi and Trollip (1991) identify four components for effective instruction: (a) information presentation, (b) learner guidance, (c) practice with feedback, and (d) learning assessment. Web-based instruction can support any or all of these elements of effective instruction. These four components guided the design of the course.

Information presentation. The course was developed as an information "container" with course tools, assignments, and hyperlinks to external web sites. Information was presented primarily using WWW pages.

Learner guidance. The chat room provided a means of synchronously communicating with students to discuss course content and exercises. Students submitted assignments electronically as attachments to e-mail. Private mail provided an audit trail and permitted a means of quick response to student questions.

Practice with feedback. Six sets of reference questions were posted in the bulletin board area. Practice searching helped refine students' search strategies. Feedback was provided during chat and grades (or points earned) were posted in the student grade area.

Learning assessment. Student projects were shared in the student presentation area. Collaborative tools such as e-mail, live chat, and a shared space for student presentations were used for learner guidance, dialogue, and practice activities.

The course provided an opportunity for students to develop and practice the following technology-based skills in an Internet environment; skills that are certainly required if school library media specialists are to successfully model information literacy skills for others. The skills encompass the following areas:

1. computer skills
2. communication skills (including electronic mail skills)
3. online information retrieval skills
4. web editing skills
5. evaluation and synthesis skills

World Wide Web Course Tools (WebCT)

Web-based instruction is viewed as an innovative approach for delivering instruction to a remote audience, using the Web as the medium (Khan, 1997). WebCT is a tool that facilitates the creation of Web-based learning environments. The first page of a WebCT course is the course home page. The home page can be configured as needed. Tool pages can be created and linked from the course home page. The designer can choose what tools to use.

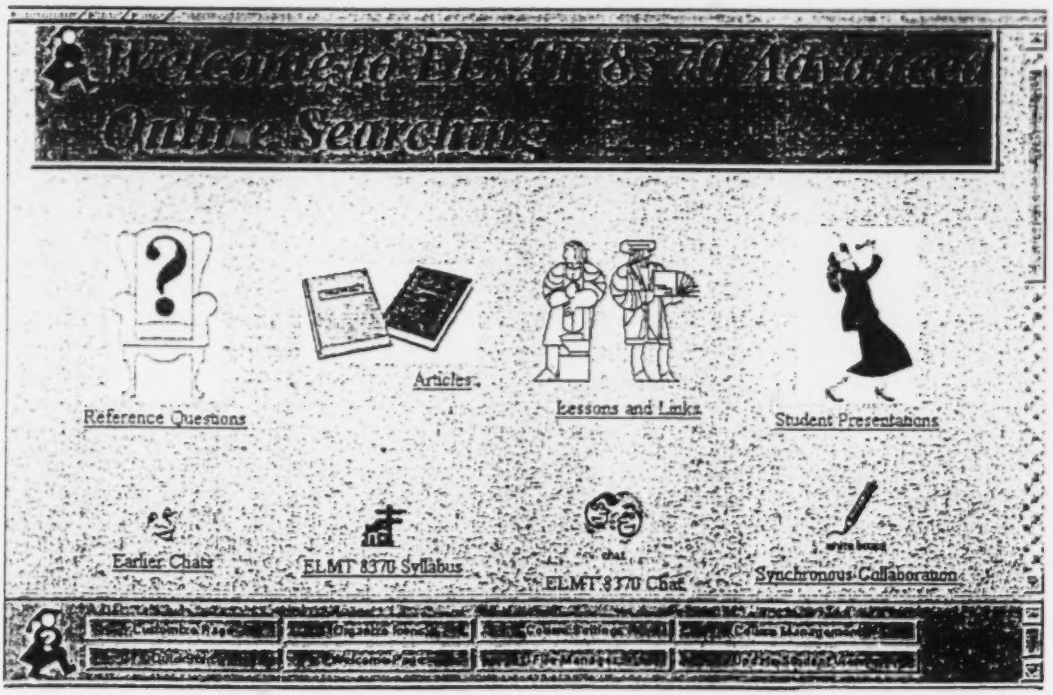

Figure 1. Course Home Page for ELMT 8370

In Advanced Online Searching, the participants used the bulletin board, the electronic mail tool, and the real-time chat facility. Students published their class projects in the student presentation area. Six sets of reference questions were posted on the reference question tool page and students e-mailed their responses to the instructor. The grade tool allowed students to monitor their posted grades.

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Ref. Ques. Set 4	Ref. Ques. Set 5	Ref. Ques. Set 6	Citation Guide	Web Page Virtual Library Guide
Edit Graph Out of 25	Edit Graph Out of 25	Edit Graph Out of 25	Edit Graph Out of 30	Edit Graph Out of 100
13 (25 of 25)	9 (25 of 25)	8 (20 of 25)	30	100
13 (25 of 25)	9 (25 of 25)	10 (25 of 25)	15	90
13 (25 of 25)	9 (25 of 25)	10 (25 of 25)	25	90

Figure 2. Student Grade Tool

In addition to responding to six sets of reference questions, the students also developed a collection of annotated bookmarks for important WWW resources, created an electronic guide to citing sources, and designed and published a virtual library guide for a specific audience. Students uploaded their hypertext markup language (html) files and associated image files to their individual directories in WebCT. Eight discussions were held online using the chat facility. The lengthy sessions are automatically archived and the transcripts of the past sessions were posted on the main course page. The chat sessions provided an avenue for discussing the assignments and readings.

The first half of the course focused on Internet information resources and the second half focused on the information provided in the Georgia Library Learning Online (GALILEO) databases.

GeorgiA LIbrary LEarning Online (GALILEO)

In Georgia locating information is facilitated by the GALILEO initiative. GALILEO, A World Wide Web-based virtual library (http://www.galileo.peachnet.edu) provides access to multiple information resources, including secured access to licensed products. Institutions that participate may access over 100 databases indexing thousands of periodicals and scholarly journals. Over 2000 journal titles are provided in full text. Other resources include encyclopedias, business directories, and various government publications. Students developed precision search strategies and practiced marking and e-mailing citations and full-text documents.

Research Questions

The purpose of the study was (a) to evaluate the use of a Web-based course tool to deliver instruction dealing with online search strategies; and (b) to determine if Web-based distance education was an effective means of helping school library media specialists develop the skills needed to successfully model information literacy skills for teachers and students. The research questions:

1. Is Web-based course delivery an effective way to prepare school library media specialists in the instructional uses of Internet information resources?
2. Is Web-based instruction a successful medium for helping school library media specialists develop skills in searching and evaluating the Georgia Library Learning Online (GALILEO) databases?
3. How do participants react to Web-based instruction?

Research Design and Methodology

Qualitative research uses a naturalistic approach that seeks to understand phenomena in context specific settings. The study employed the techniques and methods associated with qualitative research. Purposive sampling is based on the assumption that the researcher wants to discover, understand and gain insight regarding a phenomenon; therefore, the researcher selects a sample from which the most can be learned (Merriam, 1988). For this study the subjects were the graduate students taking the course. A limitation of this study is the sample size; there were only three graduate students in the course. Knowing that the enrollment in the Educational Specialist Program was going to significantly increase the following year, the course was offered despite the small class size. This afforded an opportunity to pilot the course before officially listing it as a Web-based distance education course.

Sampling Error

There are three types of sampling error that can occur in qualitative research. The first relates to distortions caused by insufficient breadth in sampling; the second from distortion introduced by changes over time; and the third from distortions caused by lack of depth in data collection (Patton, 1990). The study is limited by the first, breadth in sampling.

Data Collection

The sources of data were logs from the synchronous chat area, bulletin board postings, e-mail communications, course usage statistics, student projects and assignments, and a focus group session. Collection of data took place throughout the fifteen-week semester. Each chat session was approximately two hours in length. Since WebCT automatically saves a log of the sessions to the chat directory, entire transcripts of the discussion sessions were available for data analysis. Student could access the chat log archives from the WebCT home page for the course.

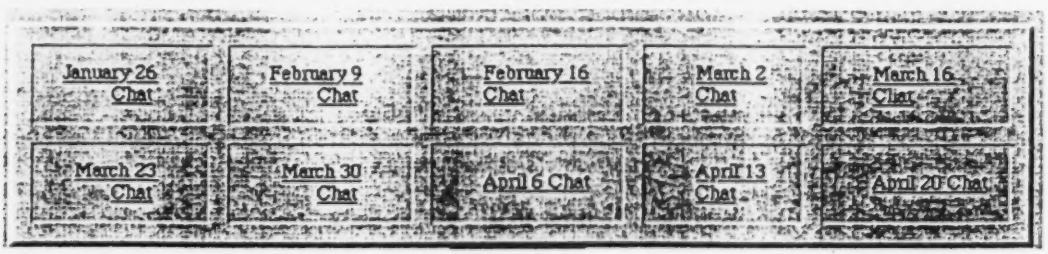

Figure 3. Chat Logs for ELMT 8370

The data in qualitative research encompass the things that are going on the environment being studied; the phenomena being observed; and the perceptions of the participants. Meeting on campus for the final session, the group discussed the course content and the technical issues involved in accessing Web-based course. Thirteen focus questions guided this discussion. The session was audio taped and provided additional data for analysis.

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Data was sorted into categories, depending on what themes, words, behaviors, patterns, or other phenomena emerged. Certain tentative themes began to emerge early in the analysis of the data. The categories changed, or were dropped, depending on whether new data supported or contradicted the direction of the categories. The initial research questions guided the classification of the themes.

Results

The findings of the study as they relate to the research questions:

Is Web-based course delivery an effective way to prepare school library media specialists in the instructional uses of Internet information resources?

Web-based course delivery is probably the only way this course should be offered. A Web-based learning environment allowed the students to explore online reference resources available on the Internet. Students developed powerful search strategies and clearly demonstrated their ability to locate and use the information they retrieved. Creating guides in the form of Web pages allowed the students to synthesize and share their knowledge with others. The objectives of the course were achieved. The course could be offered in a computer lab with Internet access, but the experiences would be extremely different. The participants agreed that the topic of the course and the instructional delivery were positively matched.

Is Web-based instruction a successful medium for helping school library media specialists develop skills in searching and evaluating the Georgia Library Learning Online (GALILEO) databases?

Although all the students had used GALILEO before enrolling in the course, they developed additional search strategies related to refining and narrowing their searches. One student had always used the ERIC databases, but was unaware of the availability of the full-text articles available in the Periodical Abstracts and EBSCO databases. Electronic mailing of citations and/or full-text articles was another new area for two students. Students limited searches to publication types such as editorials, software reviews, ethnic recipes, etc. Participants had a much easier time locating information in the proprietary databases in GALILEO, as opposed to trying to locate information from Internet sites.

How do participants react to Web-based instruction?

The participants had positive attitudes towards Web-based instruction in general. Eliminating the time spent driving to class and back was considered a big advantage and students loved being able to communicate from home. On another level, they missed seeing each other. A significant amount of time was spent socializing, checking up on one another, and discussing their day jobs.

Some additional comments concerning the delivery system were:

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"I have enjoyed using WebCT in the class." "The interface, links, and icons are clearly presented." "I sincerely have no complaints with regard to the application or its interface."

Another student commented:

> I think WebCT is a wonderful way for the instructor to share information with the students in an asynchronous manner. I even think the chat room is a great place for students to meet and work on a project (it beats those 2 o'clock on Sunday afternoon meetings at the library hands down!). But I think extended and regular distance learning segments are better held in voice-permissive environments such as video conferencing or tools like NetMeeting. An advantage I can see WebCT having over these two methods is the archive function that saves the full chat (but then again, NetMeeting has a chat feature and an archive function).

Conclusion

From this limited initial study, there is no clear evidence to support specific conclusions at this time. However, several themes do emerge. The students felt the content and the delivery system were well matched. Their ability to locate electronic information was clearly confirmed and the projects they uploaded to the student presentation area demonstrated their ability to instruct and guide others in retrieving and using electronic information. The discussion or chat logs revealed that students needed time to communicate about matters other than the course content. Students indicated that they missed face-to-face social interaction with each other. They also expressed concern about the different levels of expertise that future students might have when entering the course, and suggested additional instructional time be provided for those who needed help in developing some basic technology skills, especially Web-editing skills.

Discussion

Recommendations for the instructor

- Allow adequate time to design, develop, and upload course materials.
- Develop course materials in html format, using Web-editing software such as Netscape Composer. Learning html code is not necessary.
- Pilot the course with a small group of students before officially offering the Web-based course.
- Plan a session on campus for students who need to learn how to use Web-editing software to create Web pages.

Caveats

- Advise students that some computers are not powerful enough to handle Web-based delivery of instruction. Computers must have java-capable browsers. One student came to campus to access the course from a computer lab because she could not access the program from home.
- Synchronous chat is not possible from some school networks due to administrative security concerns. Firewalls prevent using the chat facility.
- Learning to use the courseware and developing the course materials can be time-consuming.

Information Technology and the School Library Media Specialist

School media specialists have access to a large population of users. Ninety-six percent of public schools in the United States have library media centers while eighty percent of private schools have library media centers (U.S. Department of Education, 1998). School library media specialists have the potential to make a significant impact on the instructional environment in our schools, especially in the area of electronic information literacy. The technological changes in our culture and schools must be reflected in the education of school library media specialists. As the depth, diversity, and value of Web-based information continue to grow exponentially, professional organizations are developing information literacy standards for student learning. The following statement from the American Association of School Librarians applies not only to students, but to educators as well, especially school library media specialists.

> Today's student lives and learns in a world that has been radically altered by the ready availability of vast stores of information in a variety of formats. The learning process and the information search process mirror each other: students actively seek to construct meaning from the sources they encounter and to create products that shape and communicate that meaning effectively. Developing expertise in accessing, evaluating, and using information is in fact the authentic learning that modern education seeks to promote (Marcoux, 1996).

Notes

1. WebCT screen shots used with permission.

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